

DETAILED ACTION

Status of Claims

1. This action is in reply to the application filed on 11/26/2003, and subsequent preliminary amendment filed on 05/03/2004.
2. Claims 1-25 are currently pending and have been examined.

Response to Arguments

Applicant's arguments have been fully considered and found persuasive; therefore, the Examiner has withdrawn the previous rejection under 35 USC § 102(b). The Examiner has entered a new rejection under 35 USC § 103(a) and applied art already of record. Applicant's arguments are now moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 112, 2nd

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **112 2nd Claims 1-25 recite** "exam specifications". Exam specifications are not a term of art nor are they specifically defined in the specification. Therefore, these claims are indefinite on their face. The Examiner has interpreted exam specifications to mean tests.
5. **112 2nd Claim 11 recites** "specifying a manner in which the exam is to be performed". "A manner" is a relative phrase that does not define steps used or a standard operating procedure for how one would practice the instant invention. Therefore this claim is indefinite on its face. The Examiner has interpreted a manner to mean an order.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell (US 6,047,259 A) in view of Teshima (US 6,272,470 B1).

9. **Claim 1:**

Campbell, as shown, discloses the following limitations:

- *ordering the requested exams, the order being placed by the scheduler with an acquisition modality, the acquisition modality being a system that can perform the ordered exams* (see at least Fig. 4, Fig. 13, column 19, line 61 to column 20, line 36).

Figure 13 shows a screen with options to make appointments for follow up exams, lab result retests and to check a patient into the hospital.

- *sending results of all exams performed on the patient to the referring physician, the results being sent to the referring physician by the analyst* (see at least column 6, lines 49-55).

This citation describes an exam room computer used for sharing medical examination results among analyst, technicians and physicians.

Campbell discloses the limitations as shown in the rejections above.

Campbell does not disclose the following limitation, but Teshima, as shown below, discloses the following limitations:

- *sending a request for ordering exams to be performed on a patient to a scheduler, the request being sent by a referring physician in the form of a*

decision tree of exams to be performed on the patient (see at least Fig. 6, column 4, lines 16-20, column 10, lines 34-48).

Figure 6 is a decision tree for consultations where supporting records and examinations are orders in steps 108 and 114. The first citation describes the ordering of patient examinations. The second citation and figure 6 show an operator who serves as the scheduler in the user-program to order examinations.

- *performing the ordered exams on the patient at the acquisition modality (see at least column 4, lines 8-2 and 45-52).*

Here, the electronic clinical recording system serves as the acquisition modality using medical images.

- *requesting additional exams to be performed on the patient based on an analysis of results of the ordered exams, the analysis being done by an analyst and the additional exams being requested by the analyst until an end of the decision tree is reached(see at least Fig. 6, column 4, lines 16-20, column 10, lines 34-48).*

Figure 6 is a decision tree for consultations where supporting records and examinations are orders in steps 108 and 114. Steps 110 through 115 are used after the analysis of findings and ordered exams from steps 104 through 109. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the management system of Campbell to Teshima's ability to order exams during different stages of a consultation based on a decision tree to provide more functional properties to improve the efficiency

of the system. Doing so could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected results.

10. Claim 2:

Campbell and Teshima disclose the limitations as shown in the rejections above.

Campbell and Teshima do not disclose the following limitation, but Teshima, as shown below, discloses the following limitations:

- *additional exams to be performed on the patient based on results of exams performed on the patient* (Teshima, *Id.* Noting, the exam may be a follow-up or second consultation based on a primary, secondary, tertiary, etc. exam. see at least Figure 6, column 4, lines 45-55);
- *exam specifications for all exams mentioned in the decision tree, the exam specifications for an exam specifying a manner in which the exam is to be performed* (Teshima, see at least FIG 6 and associated text in column 11, lines 8-17; Noting; Teshima teaches an exemplary embodiment of a decision tree in FIG 6 wherein exam specifications include at least a plurality of consultations, clinical diagnoses, complaints, findings, disease states, and the like.);
- *expected results for all exams mentioned in the decision tree* (*Id.* Noting, a diagnosis is an expected result.)

It would have been obvious to a person of ordinary skill in the art, at the time of the invention, to combine the systems and methods for scheduling patient exams taught by Teshima and Campbell because automatically scheduling exams for patients saves time and money for hospitals, physician practices and the like and improves the efficiency of diagnostics.

11. **Claim 3:**

Campbell and Teshima disclose the limitations as shown in the rejections above. Campbell and Teshima do not disclose the following limitation. However, Teshima discloses *each exam in the decision tree can be a parent exam of zero or more child exams and can also be a child exam of one or more parent exams*"(Teshima, see at least FIG 6 and associated text in column 10, lines 37-62; column 11, lines 46-65, Noting; Teshima teaches an exemplary embodiment of a decision tree in FIG 6 wherein child exams can stem from the new creation mode or addition modes, but no child exams can stem from the parent reference mode of consultations, clinical diagnoses, complaints, exam orders, disease states, and the like.) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine because subsequent medical exams are inherent for decision tree flow charts to ensure a more accurate and efficient method of medical treatment.

12. Claim 4:

Teshima, as shown, discloses *scheduling the requested exams with the acquisition modality* (see at least column 4, lines 17-19). Teshima does not disclose the following limitations, but Campbell, as shown below, discloses the following limitations:

- *informing the patient about the schedule of the scheduled exams* (see at least FIG 13, column 2, lines 31-38).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine to ensure as efficiency to diagnose and treat medical patients. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the management system of Campbell to Teshima's ability to schedule exams to provide more functional properties to improve the efficiency of the system. Doing so could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected results.

13. Claim 5:

Teshima, as shown, discloses the following limitations:

- *performing the ordered exams on the patient in accordance with the exam specifications to obtain medical images of the ordered exams* (see at least FIG. 6, column 4, lines 16-20, column 10, lines 34-48, column 22, lines 30-36).

Figure 6 is a decision tree for consultations where supporting records and examinations are orders in steps 108 and 114. The first citation describes the ordering of patient examinations. Also, the third citation the DICOM serves as the exam specifications to obtain medical images.

- *storing the medical images of the ordered exams in an image archive* (see at least Fig. 1, column 4, lines 45-52);

Figure 1 shows an image server with its database to that's used to store image archives.

- *sending the medical images of the ordered exams to the analyst for analysis* (see at least column 16, line 32-36).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the management system of Campbell to Teshima's ability to access medical images to provide more functional properties to improve the efficiency of the system. Doing so could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected results.

14. Claim 6:

Teshima, as shown, discloses the following limitations:

- *wherein the image archive is a database of medical images of all exams performed on patients at the acquisition modality* (see at least FIG. 1, column 16, lines 32-36).

Figure 1 shows an image server with its database to that's used to store image archives and the citation explains the medical image modality that's used. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the management system of Campbell to Teshima's ability to access a medical images database to provide more functional properties to improve the efficiency of the system. Doing so could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected results.

15. Claim 7:

Campbell and Teshima disclose the limitations as shown in the rejections above.

Campbell and Teshima do not disclose the following limitation, but Teshima, as shown below, discloses the following limitations:

- *analyzing the medical images to derive results of the ordered exams, the analysis of medical images being done by the analyst* (see at least column 16, lines 32-36);

- *comparing the results of the ordered exams with the expected results of the ordered exams, the comparison of the results being performed by the analyst*(see at least column 5, lines 35-42 and lines 57-60);
- *requesting additional exams, as mentioned in the decision tree, to be performed on the patient based on the results of a parent exam, the request for the additional exams being sent by the analyst directly to the scheduler*(see at least FIG. 6, column 4, lines 16-20, column 10, lines 34-48).

Figure 6 is a decision tree for consultations where supporting records and examinations are orders in steps 108 and 114. Steps 110 through 115 are used after the analysis of findings and ordered exams from steps 104 through 109. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the management system of Campbell to Teshima's analysis of medical exams and images to provide more functional properties to improve the efficiency of the system. Doing so could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected results.

16. **Claim 8:**

Teshima, as shown, discloses the following limitations:

- *wherein additional exams comprise: alternative exams to be performed on the patient in case the results of a parent exam performed on the patient do not*

match the expected results for the parent exam; and supplementary exams to be performed on the patient in case the results of a parent exam match the expected results for the parent exam (see at least FIG. 6, column 4, lines 16-20, column 10, lines 34-48).

Figure 6 is a decision tree for consultations where supporting records and supplementary examinations are orders in steps 108 and 114. Steps 110 through 115 are used after the analysis of findings and ordered exams from steps 104 through 109. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the management system of Campbell to Teshima's ordering of supplemental exams bases on medical results to provide more functional properties to improve the efficiency of the system. Doing so could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected results.

17. **Claim 9:**

Campbell and Teshima disclose the limitations as shown in the rejections above. Campbell and Teshima do not disclose the following limitation. However, Teshima discloses *wherein an end of the decision tree is reached when a parent exam is reached that does not have any child exams which can be ordered by the analyst based on results of the parent exam, in the decision tree* (see at least column 16, lines 43-53, Teshima, see at least FIG 6 and associated text in

column 10, lines 37-62; column 11, lines 46-65, Noting; Teshima teaches an exemplary embodiment of a decision tree in FIG 6 wherein child exams can stem from the new creation mode or addition modes, but no child exams can stem from the parent reference mode of consultations, clinical diagnoses, complaints, exam orders, disease states, and the like.) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine because subsequent medical exams are inherent for decision tree flow charts to ensure a more accurate and efficient method of medical treatment.

18. **Claim 10:**

Teshima discloses the limitations as shown in the rejections above. Teshima does not disclose the following limitation. However, Campbell discloses *wherein the results of all exams are sent by the analyst to the referring physician, who reviews the results and completes the diagnosis of the patient* (see at least FIG 2, FIG. 4 and associated text; Noting object 116 “Exam Completed”, Object 408 “Diagnosis”. Further see at least FIGs 9 and 10; Noting a “Diagnosis and treatment protocols. Further, see column 8, lines 1-18 and 52-57; Noting that the results of the results of the exams are saved. Further, see column 17, lines 15-22; “The server sends the results of these operations back to the client to update the display dynamically.”). It would have been obvious to one of ordinary skill in

the art at the time of the invention to allow a referral physician to perform and request pertinent exams as an efficient way of diagnosing patients.

19. Claims 11-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teshima (US 6,272,470 B1) in view of Campbell (US 6,047,259 A).

20. **Claim 11:**

Teshima shows:

- *exam specifications for all exams mentioned in the decision tree, the exam specifications for an exam specifying a manner in which the exam is to be performed* (Teshima, see at least FIG 6 and associated text in column 11, lines 8-17; Noting; Teshima teaches an exemplary embodiment of a decision tree in FIG 6 wherein exam specifications include at least a plurality of consultations, clinical diagnoses, complaints, findings, disease states, and the like.);
- *expected results for all exams mentioned in the decision tree* (*Id.* Noting, a diagnosis is an expected result.);
- *additional exams to be performed on the patient based on results of exams which were performed on the patient* (*Id.* Noting, the exam may be a follow-up or second consultation based on a primary, secondary, tertiary, etc. exam. see at least Figure 6, column 4, lines 45-55);
- *ordering the requested exams, the order being placed by the scheduler* (*Id.*);

- *performing the ordered exams on the patient in accordance with the exam specifications to obtain medical images of the ordered exams* (see at least column 4, lines 45-52 and column 16, lines 32-36);
- *storing the medical images of the ordered exams in an image archive*(see at least column 4, lines 45-52; column 22, line 16);
- *sending the medical images of the ordered exams to an analyst for analysis*(see at least column 4, lines 56-58);
- *requesting additional exams to be performed on the patient based on an analysis of results of the ordered exams, the analysis being done by the analyst and the additional exams being requested by the analyst till an end of the decision tree is reached wherein requesting additional exams comprises* (see at least Figure 6, column 10, lines 38-48):
 - *analyzing the medical images to derive results of the ordered exams, the analysis of medical images being done by the analyst* (see at least 16, lines 32-36);
 - *comparing the results of the ordered exams with the expected results of the ordered exams, the comparison of the results being performed by the analyst* (see at least column 5, lines 35-42 and lines 57-60);
 - *requesting additional exams, as mentioned in the decision tree, to be performed on the patient based on the results of the ordered exams, the request for the*

additional exams being sent by the analyst directly to the schedule (see at least

Figure 6, column 10, lines 38-48);

- *preparing an examination report and sending it to the referring physician, the examination report containing a final analysis of the results of all exams performed on the patient(see at least column 5, lines 57-60; column 8, line 56 through column 9, line 14).*

Teshima explicitly teaches scheduling a consultation for a specific date, set of tests and the like (see at least FIG 6 and associated text in column 11, lines 47-56). Teshima does not explicitly teach the active step of sending a request *per se*. However, Campbell does:

- *sending a request for ordering exams to be performed on a patient to a scheduler* (see at least FIG 13 and associated text; Noting, a physician recommends exams, test, appointment times and the like via an “Appt. Scheduler” (Emphasis Added).).

It would have been obvious to a person of ordinary skill in the art, at the time of the invention, to combine the systems and methods for scheduling patient exams taught by Teshima and Campbell because automatically scheduling exams for patients saves time and money for hospitals, physician practices and the like and improves the efficacy of diagnostics.

21. Claim 12:

Teshima/Campbell teaches the limitations as shown in the rejections above.

Furthermore, Campbell discloses “wherein each exam in the decision tree can be a parent exam of zero or more child exams and can also be a child exam of one or more parent exams” (see at least column 16, line 66 to column 17, line 7). It would have been obvious to a person of ordinary skill in the art, at the time of the invention, to combine the systems and methods for scheduling patient exams taught by Teshima and Campbell because automatically scheduling exams for patients saves time and money for hospitals, physician practices and the like and improves the efficacy of diagnostics.

22. Claim 13:

23. Teshima/Campbell teaches the limitations as shown in the rejections above.

Furthermore, Campbell discloses "*wherein an end of the decision tree is reached when a parent exam is reached that does not have any child exams*" (see at least column 16, lines 33-65; Noting, that at a point where a "diagnosis" has been reached, the exam does not have any further exam request steps. Further, Campbell teaches that a second protocol may be called for treating.). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the analysis of medical images and ordering exams which is inherent for decision tree flow charts to ensure a more accurate and efficient method of medical treatment.

Claims 14-25 recite limitations that have been addressed in the claims above.

Therefore, claims 14-25 are rejected for similar reasons.

24. Claim 14:

Teshima discloses the limitations as shown in the rejections below. Teshima does not disclose the following limitation, but Campbell, as shown below, discloses the following limitations:

- *sending a request for ordering exams to be performed on a patient to a scheduler, the request being sent by a referring physician in the form of a decision tree of exams to be performed on the patient wherein the decision tree comprises(see at least Figure 7; column 4, lines 17-19; column 6, lines 22-24):*
- *expected results for all exams mentioned in the decision tree; and ordering the requested exams, the order being placed by the scheduler with an acquisition modality, the acquisition modality being a system that can perform the ordered exams (see at least Figure 7; column 4, lines 17-19; column 6, lines 22-24),*
- *scheduling the requested exams with the acquisition modality (see at least column 4, lines 17-19);*
- *performing the ordered exams on the patient at the acquisition modality wherein performing the ordered exams comprises(see at least column 4, lines 45-52, column 16, lines 32-36):*
- *performing the ordered exams on the patient in accordance with the exam specifications to obtain medical images of the ordered exams(see at least column 4, lines 45-52 and column 16, lines 32-36);*
- *storing the medical images of the ordered exams in an image archive (see at least column 1, lines 53-55);*
- *sending the medical images of the ordered exams from the image archive to an analyst for analysis(see at least column 1, lines 53-55);*

- *analyzing the medical images to derive results of the ordered exams, the analysis of medical images being done by the analyst(see at least 16, lines 32-36);*
- *comparing the results of the ordered exams with the expected results of the ordered exams, the comparison of the results being performed by the analyst(see at least column5, lines 35-42 and lines 57-60);*
- *requesting additional exams, as mentioned in the decision tree, to be performed on the patient based on the results of the ordered exams, the request for the additional exams being sent by the analyst directly to the scheduler and the additional exams being requested by the analyst till an end of the decision tree is reached wherein the additional exams comprise (see at least Figure 6, column 4, lines 45-55);*
- *alternative exams to be performed on the patient in case the results of an exam performed on the patient do not match the expected results for the exam(see at least column 6, lines 46-55; column 18, lines 12-16);*
- *supplementary exams to be performed on the patient in case the results of an exam match the expected results(see at least Fig 6, steps 102 & 103; column 17, lines 1-13; column 18, lines 12-16);*
- *preparing an examination report and sending it to the referring physician, the examination report containing a final analysis of the results of all exams performed on the patient(see at least column 9, line 25-31).*

Teshima discloses the limitations as shown in the rejections above. Teshima does not disclose the following limitation, but Campbell, as shown below, discloses the following limitations:

- *informing the patient about the schedule of the scheduled exams*(see at least column 18, lines 12-17; column 20, lines 13-29);
- *requesting additional exams to be performed on the patient based on an analysis of results of the ordered exams, the analysis being done by the analyst* (see at least column 6, lines 46-55; column 18, lines 12-16);
- *additional exams to be performed on the patient based on results of exams, which were performed on the patient*(see at least column 16, lines 55-59 and column 18, lines12-16);
- *exam specifications for all exams mentioned in the decision tree, the exam specifications for an exam specifying a manner in which the exam is to be performed*(see at least column 8, lines 3-6);

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the scheduled instructions and specifications of ordering exams with all aspects of determining diagnoses to better treat medical patients in a timely manner.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Teresa Woods** whose telephone number is **571.270.5509**. The Examiner can normally be reached on Mon-Fri, 7:30am - 5:00 pm, east. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **Jerry O'Connor** can be reached at **571.272.6787**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> . Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

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